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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,191	10/28/2003	Stephen E. Trenchard	APWR-P002US	4284
7590 11/15/2005			EXAMINER	
Elizabeth R. Hall 1722 Maryland Street Houston, TX 77006-1718			HAN, JASON	
			ART UNIT	PAPER NUMBER
			2875	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/695,191	Applicant(s) TRENCHARD ET AL.	
	Examiner Jason M. Han	Art Unit 2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
4a) Of the above claim(s) 15-29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20031028</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 15-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on September 6, 2005.
2. Applicant's election without traverse of Claims 1-14 in the reply filed on September 6, 2005 is acknowledged.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following claims have been rejected in light of the specification, but rendered the broadest interpretation as construed by the Examiner [MPEP 2111].

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140

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F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claims 1-3, 12, and 14 of copending Application No. 11/034327.

5. Claim 3 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 8 of copending Application No. 11/034327.

6. Claim 4 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 9 of copending Application No. 11/034327.

7. Claim 8 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 6 of copending Application No. 11/034327.

8. Claim 10 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 5 of copending Application No. 11/034327.

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9. Claim 11 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 15 of copending Application No.

11/034327.

10. Claim 13 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 17 of copending Application No.

11/034327.

11. Claim 14 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over Claim 16 of copending Application No.

11/034327.

12. Although the conflicting claims are not identical, they are not patentably distinct from each other because the copending application similarly recites all the structural limitations of the current application, wherein the copending application recites a plurality of LED modules, which may be interpreted to be a part of the central member, and which further has a plurality of LEDs secured to vertical surfaces thereof.

13. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The following claims have been rejected in light of the specification, but rendered the broadest interpretation as construed by the Examiner [MPEP 2111].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1, 7-8, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Verdes et al. (U.S. Patent 6425678).

15. With regards to Claim 1, Verdes discloses a lighting device including:

- A plurality of LEDs [Figure 3: (31)] disposed in a radial array about a vertical axis;
- A central member [Figure 3: (35)] having each LED mounted on a vertical surface thereof, whereby the central member is made of a thermally conductive material to conduct heat away from the LEDs [Column 3, Lines 51-55]; and
- A hollow member [Figure 3: (11)] having a dentated surface, wherein the dentated surface surrounds the LEDs to diffuse the light emitted from the LEDs.

16. With regards to Claim 7, Verdes discloses the central member being made of metal [Column 3, Lines 51-55].

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17. With regards to Claim 8, Verdes discloses the central member being in contact with a thermally conductive element [Figure 3: (18)], whereby a portion of the thermally conductive element is in contact with the air outside of the lighting device [Column 3, Lines 16-19].

18. With regards to Claim 13, Verdes discloses a light socket base [Figure 3: (14-16, 18)] electrically connected to the LEDs [Column 4, Lines 43-45].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 2 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verdes et al. (U.S. Patent 6425678) as applied to Claim 1 above, and further in view of Heenan et al. (U.S. Patent 3221162).

Verdes discloses the claimed invention as cited above, but does not specifically teach a curved optical lens disposed about the vertical axis surrounding the hollow member, wherein the lens converges beams of light emanating from the hollow member in all horizontal directions (re: Claim 2), nor teaches the lighting device being designed to fit within a Fresnel lens of a navigational light (re: Claim 14).

Heenan teaches a marine navigational light, wherein a lighting device [Figure 1: (20)] is surrounded by a hollow member [Figure 1: (30) – Fresnel lens] that converges

the beams of light emanating therefrom in all horizontal directions, which is then fitted within a Fresnel lens [Figure 1: (50)].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the lighting device of Verdes to incorporate the multiple Fresnel lenses of Heenan to optically affect the illumination in a desired manner for navigational purposes, whereby it may be "desirable to provide not only an omnidirectional visual signal, but a highly directional beamed signal of relatively high intensity in at least one, and often more than one, specific azimuth in addition to the omnidirectional signal." [Column 1, Lines 43-47]

20. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Verdes et al. (U.S. Patent 6425678) as applied to Claim 1 above, and further in view of Ferng (U.S. Patent 5237490).

Verdes discloses the claimed invention as cited above, but does not specifically teach the lighting device having twelve or less LEDs.

Ferng teaches a lighting device having twelve light emitting diodes [Figure 1; (42)].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the lighting device of Verdes to incorporate twelve or less LEDs, as taught by Ferng, in order to provide a desired illumination intensity and ensure appropriate levels of power consumption and heat generation for said device, thus appeasing aesthetic and safety concerns.

21. Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verdes et al. (U.S. Patent 6425678) as applied to Claim 1 above, and further in view of Abtahi et al. (U.S. Patent 5890794).

Verdes discloses the claimed invention as cited above, but does not specifically teach the lighting device having four LEDs spaced ninety degrees apart in a common horizontal plane (re: Claim 4), nor the LEDs being enclosed in an airtight enclosure (re: Claim 6).

Abtahi teaches a lighting device having four LEDs spaced ninety degrees apart in a common horizontal plane [Figure 3: (18)], and the LEDs being enclosed within an airtight enclosure [Column 3, Lines 10-15; Column 5, Line 65 – Column 6, Line 15].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the lighting device of Verdes to incorporate the four LEDs spaced ninety degrees apart within an airtight enclosure, as taught by Abtahi, so as to ensure appropriate illumination all around said device and to prevent moisture or other contaminants of the ambient air from entering the device, thus appeasing aesthetic and safety concerns.

22. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Verdes et al. (U.S. Patent 6425678).

Verdes discloses the claimed invention as cited above, but does not specifically teach the LEDs having a driving current of about 1-5 Watts.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the LEDs with a driving current of about 1-5

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Watts, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, one may want to provide desired illumination intensity and ensure appropriate levels of power consumption and heat generation for said device, thus appeasing aesthetic and safety concerns. It is also commonly known within the art to have 1W LEDs (i.e., Luxeon® LEDs).

23. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Verdes et al. (U.S. Patent 6425678) as applied to Claim 1 above, and further in view of Hochstein (U.S. Patent 5857767).

Verdes discloses the claimed invention as cited above, but does not specifically teach the LEDs being secured to the central member using a thermally conductive adhesive.

Hochstein teaches “adhesively securing light emitting diodes to the circuit traces with an electrically and thermally conductive adhesive.” [Column 3, Lines 31-33]

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the lighting device of Verdes to incorporate the thermally conductive adhesive of Hochstein to ensure appropriate and effective heat transfer from the LEDs to the central member, thus ensuring efficiency for said LEDs.

24. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Verdes et al. (U.S. Patent 6425678).

Verdes discloses the claimed invention as cited above, but does not specifically teach the hollow member being made of an optically transparent, heat resistant material (re: Claim 11), nor teaches the hollow member being made of glass (re: Claim 12).

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the hollow member out of an optically transparent, heat resistant material or out of glass, since it has been held to be within general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416. In this case, one would want to make the hollow member out of a transparent member (e.g., glass) so that the illumination may efficiently exit the lighting device, as well as a heat resistant material to prevent accidental burns when touched or for repairs/replacements.

Allowable Subject Matter

25. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

26. The following is a statement of reasons for the indication of allowable subject matter: With regards to Dependent Claim 10, the Applicant sufficiently claims and narrowly defines the central member having a centralized right angle prism with a square horizontal cross-section. The prior art fails to teach or suggest the combination of structural elements disclosed and claimed in combination with Independent Claim 1.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are further cited to show the state of the art pertinent to the current application, but are not considered exhaustive:

US Patent 5929788 to Vukosic;

US Patent 6086220 to Lash et al;


US Patent 6183100 to Suckow et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH (11/9/2005)


Stephen Husar
Primary Examiner